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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/604,587

07/31/2003

CHING-YU CHANG

10264-US-PA-1

1586

31561

7590

01/20/2004

JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE  
7 FLOOR-1, NO. 100  
ROOSEVELT ROAD, SECTION 2  
TAIPEI, 100  
TAIWAN

EXAMINER

PERKINS, PAMELA E

ART UNIT

PAPER NUMBER

2822

DATE MAILED: 01/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

RECEIVED  
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TECHNOLOGY CENTER 2800

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/604,587	CHANG, CHING-YU	
	<b>Examiner</b>	<b>Art Unit</b>	
	Pamela E Perkins	2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

This office action is in response to the filing of the application papers on 1 August 2003. Claims 1-9 are pending.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang (6,541,828) in view of Ko (6,479,864) and Li et al. (6,545,310).

Chang discloses a method of fabricating a non-volatile memory where a longitudinal strip stacked layer is formed over a substrate (40); forming a buried bit line (46) in the substrate on each side of the longitudinal strip; patterning the longitudinal strip to form a plurality of stacked blocks; forming a dielectric layer (48) over the substrate (40); forming a word line (44) over the dielectric layer (48). Chang further discloses forming the buried bit line using ion implantation with the longitudinal strip as a mask (Fig. 7B; col. 3, line 22 thru col. 4, line 41). Chang does not disclose the longitudinal strip having a cap layer, a conductive layer and gate dielectric layer and the word line connecting blocks on the same row serially.

Ko discloses a method of fabricating a non-volatile memory where a longitudinal strip stacked layer is formed over a substrate (12), wherein the longitudinal strip

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includes a gate dielectric layer (42), a conductive layer (44) and a cap layer (48); and forming a dielectric layer (22) over the substrate (12). Ko further discloses the cap layer (48) having a greater etch rate than the dielectric layer (22). Ko also discloses conducting a wet or dry anisotropic etching process to remove the cap layers (Fig. 5; col. 7, line 36 thru col. 8, line 14).

Since Chang and Ko are both from the same field of endeavor, a method of fabricating a non-volatile memory, the purpose disclosed by Chang would have been recognized in the pertinent art of Ko. Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to modify Chang by the longitudinal strip having a cap layer, a conductive layer and gate dielectric layer as taught by Ko to preventing layers not aligned with the selected pattern (col. 7, lines 65-67).

Li et al. disclose a method of fabricating a non-volatile memory where a longitudinal strip stacked layer is formed over a substrate and forming a word line (2) over the substrate to connect blocks on the same row serially (fig. 4; col. 5, lines 3-51).

Since Chang and Li et al. are both from the same field of endeavor, a method of fabricating a non-volatile memory, the purpose disclosed by Li et al. would have been recognized in the pertinent art of Chang. Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to modify Chang by the word line connecting blocks on the same row serially as taught by Li et al. to obtain control the gated structures (col. 5, lines 5-30).

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***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pamela E Perkins whose telephone number is (571) 272-1840. The examiner can normally be reached on Monday thru Friday, 9:00am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on (571) 272-1852. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

PEP

A handwritten signature in black ink, appearing to be a stylized 'P' followed by a long horizontal stroke.

<b>Notice of References Cited</b>	Application/Control No. 10/604,587	Applicant(s)/Patent Under Reexamination CHANG, CHING-YU	
	Examiner Pamela E Perkins	Art Unit 2822	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-6,479,864	11-2002	Ko, Kei-Yu	257/347
	B	US-6,541,828	04-2003	Chang, Ching-Yu	257/390
	C	US-6,545,310	04-2003	Li et al.	257/314
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.